posed by displacing or splitting the sub-clavius muscle and cutting through the fascia. It is doubly ligated and divided, the arm is held up so that it will be partly emptied of blood, and the sub-clavian vein in then ligated and divided. The supra-scapular and transversalis colli arteries are now isolated and tied. The brachial plexus is exposed and infiltrated with 1 per cent. cocaine solution and cut across. An incision is now made from the acromion downward across the axilla to the angle of the scappula and up again back of the shoulder to the acromion. The incision will have to be greatly varied according to the location of the disease in the axilla and on the chest. The anterior flap is now dissected off the chest wall so as to allow of complete removal of the pectoralis major and minor, which are carefully dissected off together with the axillary contents. The latissimus dorsi is sectioned as far from its attachment as possible. The extremity now falls away from the chest wall and the serratus, rhomboidei, levator anguli scapuli and trapezius are cut through and the operation is complete. The wound should be completely closed and a large drainage tube inserted low down through a small incision. Recovery is usually very rapid, although the patients have at first some difficulty in balancing themselves.

Case No. 1. This man, a Belgian fireman, 27 years old had syphilis some six years prior to my seeing him, but a thorough course of mercury and iodide had no effect upon his present disease. Seven months ago the patient began to feel some pain in his arm and one day while in the bath sustained a spontaneous fracture of the humerus. During the succeeding months he was in different hospitals and his condition grew gradually worse until he came under my care Sept. 9, 1905. At this time he showed a tumor of the upper end of the humerus, which had apparently invaded the shoulder joint. The tumor had infiltrated the deltoid and projected into the axilla. No ulceration was present. The patient refused operation until a section had been removed and the growth shown to be a spindle-celled sarcoma. An interscapular-thoracic amputation was made on Sept. 16th. Owing to a nurse's error, the nerves were not infiltrated with cocaine, and the patient, although in excellent condition prior to the operation, was greatly shocked thereby. He made an excellent recovery, the wound healing by first intention. Three years later the patient showed no signs of local recurrence but suddenly developed gangrene of the right leg and a hip joint amputation was done by another surgeon. About this time he developed a cough and dyspnea and died 38 months after my operation. An autopsy was refused.

Case 2. The patient, a Finnish farmer, 50 years old, bruised the fourth finger of his right hand six months ago. Suppuration developed around the nail and persisted two years, when the odor and pain became so great that for the first time, he consulted a surgeon. At this time the hand and forearm were greatly swollen and Dr. John White of Sacramento amputated in the middle of the second third of the humerus. The stump healed quickly and the patient returned to work 4 years ago. Four months ago the patient noticed an enlarged gland in the axilla about the size of a lima bean. Within a week four or five more developed. The stump began to swell and became very painful, the enlarged glands soon broke down and when he came to my office on Nov. 25th, a fungating suppurating mass filled the axilla. The patient had a cough with profuse expectoration. No T. B. were present. He showed areas of dullness over the right lung. The patient had lost 15 lbs. in the last couple of months and was in a bad condition. I did an interscapular-thoracic amputation on Dec. 1, 1909, the brachial plexus was carefully infiltrated with 1% cocaine solution and an extensive area of skin was removed from the chest wall. It was not covered at the time of the operation but was successfully grafted at a later date. The patient suffered no shock and recovered rapidly. In two months he had gained 30 lbs. but was still coughing. Five months later he was still in good condition and there was no local recurrence. Since then I have lost sight of him.

The contrast between the two operations with and without infiltration of the plexus is striking. The first patient, a young man in excellent condition was not infiltrated and suffered extreme shock, the second was an old man in very poor condition and had a more extensive operation, but had his nerves infiltrated. He suffered no shock.

SELECTED CHAPTERS IN THE STUDY OF SPEECH DISTURBANCES. NO. 2.—THE RESPONSIBILITY OF THE GENERAL PRACTITIONER TO THE CHILD WITH A SPEECH DEFECT, WITH SUGGESTIONS AS TO PROPHYLACTICS.*

By HENRY HORN, M. D., San Francisco.

(Continued from Page 27, January, 1912, Journal.)

of a mistake when he is reciting or fear of a correction by his overzealous and probably tired teacher. To use a homely expression, he is continually "worked up." I need but to mention these things and the prophylactic possibilities involved will be seen without going into details.

The infectious diseases, and especially diphtheria, scarlet fever and typhoid, are well-known causal elements. It is exceedingly common for parents to observe that the child's speech was decidedly worse after such an illness.

The role which the adenoid plays in the etiology of stuttering furnishes an interesting chapter and has been very carefully studied. Guye first applied the word Aprosexia to that mental and physical complex which follows on a child being unable to use its nose for breathing purposes. This condition is now so well known that it causes no comment when the removal of adenoids not only vastly improves a child mentally but actually cures an idiot. That stutterers have been healed by this simple operation lies within the experience of most specialists in speech disturbances. Statistics show that 50% of the stutterers have adenoids. As a corollary to this we recognize that the effect of all nasal disturbances, polyps, septum deviations, etc., are of great importance in the etiology of these conditions.

A great war has been waged in Europe over the role which the scrophulous diathesis and rickets play in the etiology of the stutterer. The various arguments do not interest us here. That the two are found very commonly together is a well-known fact. In these two diseases the bodily resistance is low and it is probable that this is the principal causal relation. That the diminished breathing space in rickets is a direct causal factor is very doubtful. My former chief, Professor Gutzmann, has carefully gone into

* Read by invitation of the Alameda County Medical Society, November 15, 1910.

the matter and finds that diminished lung volume has no direct bearing on the subject.

It would not do to leave this interesting chapter on etiology without completing it with a few words on the psychical causes of stuttering. We must distinguish between two types: psychical shock and psychical contagion.

The effect of psychical shock has been very much overestimated. That it does have a direct causal bearing there can be no question, but that it is usually evanescent in its effects is now generally recognized. Psychical infection, on the other hand, is a very common cause of stuttering. For that reason some of the best of German observers contend that a stuttering child should be removed from school on account of the danger he is to other children. Often we have real epidemics of stuttering, where the removal of the original offender would put an end to the trouble.

I have not yet had occasion to speak of sex as a determining factor. It is very hard to get at reliable statistics, as in our clinic stuttering among girls was not considered by the parents as important as among boys, and therefore they were not brought as often for examination to the clinic. One must therefore depend upon school statistics. In nearly 700 cases from six different German cities, 71% were boys and 29% were girls. As we reach the adult life the percentage of males increases, as Coen gives 90% for men and 10% for women. This very interesting change in the percentage Gutzmann has sought to explain as a result of his very celebrated studies on the breathing of the stutterers. Both boys and girls have a costal abdominal type of breathing. After puberty the costal type remains in the case of the female and her stuttering usually disappears at this age. A spontaneous healing on the part of the boy is exceptional. The conclusion is obvious.

Colombat tries to explain these striking results differently. He contends that woman has a greater freedom in speaking and through a desire to please and to make herself perfect she is ever on the outlook to try and correct any imperfections as soon as they are recognized.

The economic usefulness of the adult stutterer is limited. He can be a bookkeeper, a mail carrier, a farmer, a ditch digger, a fruit picker, a horseshoer or do any other kind of purely manual labor, but from the learned professions he is excluded; he can not be a teacher, and even as a salesman behind the counter he is of no use. He is a sociological fizzle, a burden to the community, but most of all to himself. Knowing himself to be different from other men, he becomes morbid, physically depressed and mentally reticent.

A man who speaks correctly can not stutter. This antithecal statement contains the basal principle of all prophylactics in speech defects and will be elaborated upon later. To put it in another way, I could say, *if we can teach the child to speak correctly,* I mean in the physiological sense, *he could never develop a speech defect.* If we could teach the child with a tendency to stutter to speak physiologically, to speak as a normal child should, he would be cured of his stuttering. This is the underlying principle of Gutzmann's method. You must grant me that it sounds sensible. It is sensible to this extent, that in 1000 cases of stuttering which he reported several years ago,—and his experience is the largest in the world,—that in 1000 cases 87% were permanently cured, 10% very much improved and 3% were not cured. Now this simply means that these results, equaled nowhere in the world, were obtained as a result of a study of the way a child normally speaks, of the way a child normally develops its speech, and then the application of these principles to the patient with a speech defect, be it a child or an adult. It sounds logical and it is. And here is where the general practitioner comes in, and where his prophylactic measures commence. Let him learn the elements of the physiology of speech and the secret is out. Even a brief review of this subject would here occupy too much time, and I will therefore pass on to a consideration of the subject of prophylactics.

I will group the suggestions under six headings in order that they can be easily carried in the mind, so that when you have an opportunity to advise a mother or a father, a nurse, or a teacher, you will be able to do so in a succinct and striking way. Let it be part of your missionary work as is now the education of the public in matters of tuberculosis and venereal prophylaxis.

1—*Let the model from which the child copies be as perfect as possible.*

Just in proportion as the mother speaks slowly, clearly and distinctly, just in that proportion will the child imitate her. Is there a tendency on the part of either of the parents to speak rapidly, let there be an especial effort on their part to always speak slowly before the child.

One who has not had experience in the teaching of these children can not realize the strain that is put on the patience of the teacher, the relations and the parents during the period of this monotonous training. One is always under a certain suppression, one must hold his thoughts always in the leash and be always on the watch that no backsliding occurs.

2—*The child must be carefully protected from contact with persons employing imperfect speech.*

The faculty of imitation in children is so strong that one can not exercise too mch care in this respect. The parents must articulate sharply and distinctly and especial attention must be taken in the selection of a suitable nurse. Employ no foreigners. Uneducated Swedes and Germans are especially to be avoided. The harsh consonants and the grammatical mistakes of these races as generally found among nurse girls are especially dangerous.

In children who show a tendency to be backward in imitating sounds, we must make it a special point to speak as much as possible before them.

3—*Observe* the physiologic sequence of consonants in teaching a child to speak.

In the development of the various sounds of speech a certain order is always followed by chil-

dren of all the nationalities which have been studied. This order depends on certain physiological laws, and briefly speaking, follows the ease with which the consonants are formed. Therefore one must, in educating a child to speak, and especially one who shows a tendency to a speech defect, use this same order. To Fritz Schultze we are indebted for such a careful study of this subject that his work has now become a classic. He was able to demonstrate that the physiological difficulty of articulation increases as we go from those consonants formed with the lips and tip of the tongue to those formed with the back of the tongue and roof of the mouth. Thus we divide all consonants into three articulation systems. Briefly they are as follows: First articulation system: Includes all consonants formed with the lips alone, or with the under lip and the upper row of teeth, viz: b, m, p, f, v. Second articulation system: Includes all consonants formed with the tip of the tongue, the teeth and the ant. part of the hard palate, viz: d, s, l, r, n, t, s, z. Third articulation system: Includes all sounds formed between the back of the tongue and the palate, viz: g, j, ng, r, k, ch.

If now it becomes necessary for the physician to recommend to the parents a course in imitation as described under the fourth suggestion as to prophylaxis, this order should if possible be observed, without of course so pedantically holding to it that the child's interest is lost.

5—*The gradual development of speech should be watched with unremitting care.* Remember that any child, but especially one with a tendency to hasty speaking, reflects in his speech his daily life. Full of animal spirits, he plays all day long; his wishes and his ideas are always in advance of his bodily ability to carry them out. Ideas tumble over one another for physical expression, he drops one plaything to take up another before the first idea is brought to fruition. So with his words, the busy thoughts crowd his little brain, he strives in vain to express himself as quickly as he thinks, and the peripheral muscles of expression find themselves utterly unable to cope with the task. What occurs? An incoordination of the breathing and speaking mechanism results and the child develops into a stutterer.

What would suggest itself as a practical remedy to correct this hastiness in speaking and thinking? The elder Gutzmann's plan has proved of such practical benefit, that I use it as a routine part of all treatment of stutterers, and it is equally valuable as a prophylactic agent. The idea in brief is this:

Every child is fond of stories and fairy tales. Relate them to him in short, logically constructed sentences, and let him repeat the sentences slowly and clearly after you. Then ask short questions concerning each sentence or idea, and have the child answer in a slow, clear and logical manner. In this way the child learns to think logically and speak slowly and clearly. It teaches him to think and to have patience and listen to what other people are saying. Children also love to look at pictures. One can amuse them by the hour telling them stories about them and at the same time asking them questions. Here is an opportunity which the patient parent who has the welfare of his child at heart can utilize and do an immense amount of good, simply by following the simple suggestions of slow speaking, clear speaking, and logical questioning. The child must be required to answer slowly, distinctly and logically. Never let a slip go by. Insist on a clear articulation of every letter. Let the child always watch your lips. Never scold, always praise, and never let the child imagine for a moment that he is speaking differently from other children.

6—In the third period of speech development, or the period in which the child's thoughts are expressed in words, there are always certain sounds that the child cannot pronounce correctly, as for example, the substitution of a "T" for a "K"; this is in a certain sense physiologic and is technically known as physiological stammering, but this defect can be carried on into a later period and the child then becomes a stammerer (not a stutterer, a distinction which I will explain later). This developmental defect can be easily corrected by remembering the suggestions made above, namely, a most careful attention to clear articulation before the child.

Finally, remember that when the child first goes to school at the age of six, speech development is not half completed and certain prophylactic regulations are here to be carried out which are principally to be put in the hands of the teachers.

As the child begins with the public school work, usually at the age of six, there are two groups of speech disturbances to which he is especially liable, both different as to their etiology and both radically different as to their prognosis. These two groups are Stuttering and Stammering. These two words stuttering and stammering have so often been confounded or used synonymously, that before I go any further I wish to explain the difference. By stuttering I mean, what one usually understands by that term. Stuttering is a condition in which, through a lack of coordination of the nervous mechanism controlling the organs of speech, there is difficulty in enunciation which may comprise either spasmodic effort without articulate sound or frequent repetition of the same articulate sound before the utterance of the one following.

The word "Stammer," on the other hand, covers all those defects of speech where there is a faulty pronunciation of any given letter or the substitution of one letter for another.

The only statistics which are at hand are those compiled by Gutzmann, and I will use them to emphasize what I am about to say. He was able to draw a conclusion from his statistical studies which is pregnant with thought and is extremely interesting. Studying the occurrence of stuttering according to ages, he found that among 3000 stuttering school children the following results were obtained: That among every hundred children of this series, 6% were between 6 and 7 years, 10% between 7 and 8, and that in 11th and 13th years 15% of the number occurred.

The increase at the time of puberty is easily understood on account of the change taking place in

the nervous system at that time, but the rapid rise of the curve at the end of the first school year is very striking. What does this indicate? It indicates that the latent causes of stuttering which up to now were in a favorable environment, are suddenly thrown into a most unfavorable one; the excitement of the school, the anxiety and nervous strain of the lessons, the fright of speaking before strangers, and the association with other stuttering children, all have a strong influence. This, however, does not entirely explain the situation, for otherwise these same factors would be at work on all the children and we would expect far more stutterers. An explanation is found in a study of the family of these children where hereditary plays an enormously important part. Against such conditions the school is helpless, but much indeed can be done by the teacher who knows something of these matters and who can mitigate the severity of the regime, and can prevent as far as possible all causes which would tend to irritate the nervous system of the child.

The influence of the school on the stammerers is entirely different. The first year of school has almost the opposite influence. At the end of it, over 29% are cured by ordinary instructions in the school, and as the 14th year approaches but 6% remain. If now, I again repeat, the teacher knew something about the elements of this subject, and I think you will grant me, enough has been said to warrant my claim that they should be instructed in the principles of the subject, this percentage could be almost entirely wiped out.

"The time to cure Stuttering is before it begins." These few suggestions should be combined with a regulation of the general health of the child. Just in proportion as his general health is below par, just in that proportion will he stutter. It is a very common experience to have a child almost cured and ready to be discharged and then to have a relapse occur solely and simply on account of an acute coryza. This brings with it a corollary which is also important in many other respects. One of the principal things which must be attended to when the child begins a course of instruction for the cure of stuttering, is a removal of the tonsils and adenoids. The direct influence of these can not be overestimated and their indirect influence is well known to every general practitioner.

Finally of especial importance is the one unbreakable rule that the child himself must never hear the word Stutter. Just the moment that he recognizes that he is different from other children, just at that moment a psychological element comes into play which has a permanent influence on his future and makes the subsequent treatment the more difficult. Remember we are not trying to cure Stuttering, we are simply substituting a normal method of speaking and breathing for an abnormal one.

And finally we must not forget that we can teach the child to speak normally, but if the child himself will not use the means for correct speaking, which we have put into his hands, he will still speak incorrectly.

(Concluded.)

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of December, 1911, the following meetings were held:

Combined meeting of Medical and Urological Sections, Dec. 5th.

1—Analysis of Sixty-Two Cases of Lues Treated with Salvarsan. Louis Gross and W. S. Johnson. Discussed by R. L. Rigdon. (This paper was published in the January issue of the Journal.)

2—Fatal Case of Luetic Myelitis after Intramuscular Salvarsan Injection. V. G. Vecki. Discussed by Leo Newmark.

3—Salvarsan in Nervous Diseases. H. C. Moffitt.

4—Salvarsan in Cutaneous Medicine. Howard Morrow.

5—The Intravenous Application of Salvarsan, with Special Reference to its Technic. Geo. W. Hartman.

General discussion by the following members: Wm. Ophuls, C. M. Cooper, L. S. Schmitt, John C. Spencer, Louis Breitstein, H. R. Oliver, S. J. Hunkin, Wm. Ford Blake, W. C. Alvarez, F. C. Keck, H. C. McClenahan, Geo. D. Culver, Louis Gross, V. G. Vecki.

Annual Meeting, December 12th, 1911.

1—Clinical Laboratory and the Clinician. Rachel L. Ash. Discussed by Wm. Ophuls.

2—Annual Address of President.

3—Reports of Secretary, Librarian and Committees.

4—Election of Board of Directors.

Section on Surgery, December 19th, 1911.

1—Demonstrations. H. B. A. Kugeler. (a) Spontaneous Rupture of a Large Vein on the Surface of a Fibroid Uterus.

J. T. Watkins (b) Astragalectomy (Whitman's Operation). (c) Operation for the Cure of Claw-Foot. (c) Operation for Bunion.

2—Recent Advances in Regional (Local) Anesthesia. Leo Eloesser. Discussed by Dudley Tait, H. B. A. Kugeler, Sol Hyman, J. T. Watkins.

Spontaneous Rupture of a Large Vein on the Surface of a Fibroid Uterus.

Specimen presented at the Section on Surgery of the San Francisco County Medical Society, December 19th, 1911, by H. B. A. Kugeler, M. D.

Miss W., 27 years, German, nurse girl. Never sick in her life; menstruation always regular; occasional pain in the abdomen. She had paid no attention to the very gradual enlargement of the abdomen but always had difficulty in getting a properly fitting corset. On November 16th, 1911, while preparing lunch for her charge, she suddenly collapsed and was found by her mistress lying in a chair blanched and gasping for breath. Dr. W. B. Lewitt was summoned who diagnosed an internal hemorrhage and from the shape and feel of the mass in the abdomen, suspected an extra-uterine pregnancy at term and referred the case to Dr. C. von Hoffman. The latter had her transferred to the Children's Hospital and ordered normal salt transfusion. The patient's relatives who had been notified, desired to have me see the case and Dr. von Hoffman kindly transferred her to me. Under ether anesthesia Dr. von Hoffman made a vaginal examination and pronounced the case not pregnant. So the condition must be one of enormous fibroids. On opening the abdomen enormous quantities of blood escaped, the mass was rapidly delivered, although with considerable difficulty. On its posterior surface was a vein as large as a small finger which had ruptured and from which blood was pouring. Beside the two enormous fibroids the body of the uterus was studded with smaller ones and a supra-cervical hysterectomy, including a removal of both tubes and ovaries, was performed. The patient rallied promptly and left the hospital on the 17th day. The specimen shows how easily it could be mistaken for a foetus.